INTERNATIONAL SOLDIER SYSTEMS CONFERENCE AND EXHIBITION 2004

Pathfinder Raven Small Unmanned Aerial Vehicle

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TPID, ACTD & Urban Technology Office

The Science Behind the Warrior:

Yesterday, Today and

Agenda

Pathfinder Raven:

- Background
- Requirements
- System Develop
- System Descript
- Operational Use
- Future Developments

Background

- **Intelligence collection and dissemination tool**
- **Evolved from the larger Pointer SUAV**
- **Initial prototype to fielding in 5 months**

Requirements Development

Pointer SUAV provided an initial reference point for the design.

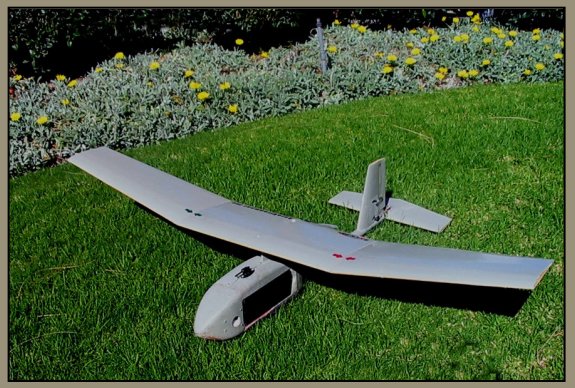
- Portable and operable by dismounted infantry
- ½ size and weight of Pointer
- Performance equal or better than Pointer
- Simple, reliable, robust and effective
- Minimize cost (through design and

Requirements Development

- **Pointer training sessions**
  - Pathfinder Raven team executed training, developing expertise in system operation and tactics
  - Provided on-going access to SUAV users
- **Soldier input throughout design was key to success**

System Development

- **Spiral development: iterative prototyping, modeling, and testing**
- **User feedback in each iteration**

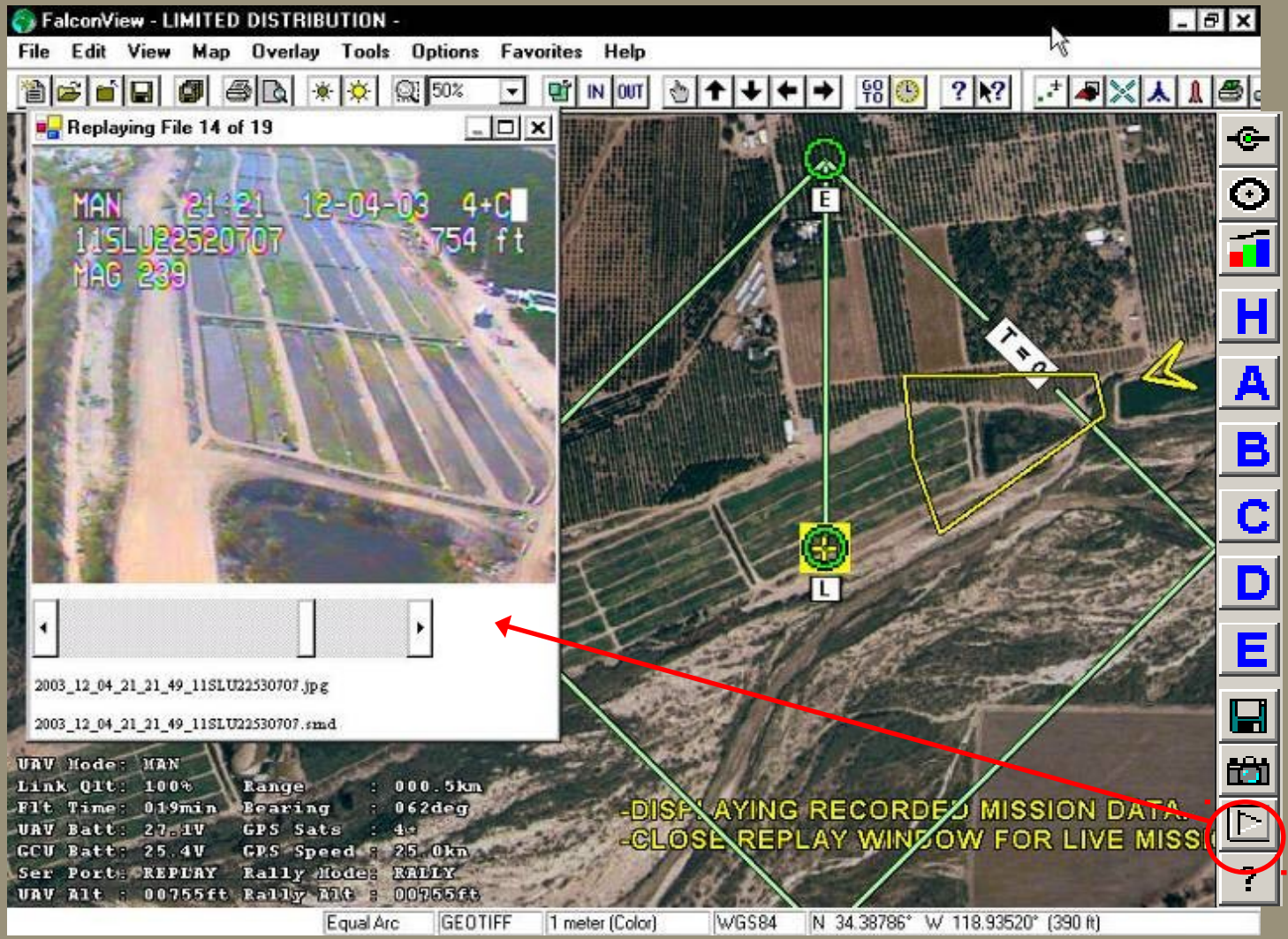


The Pathfinder Raven System

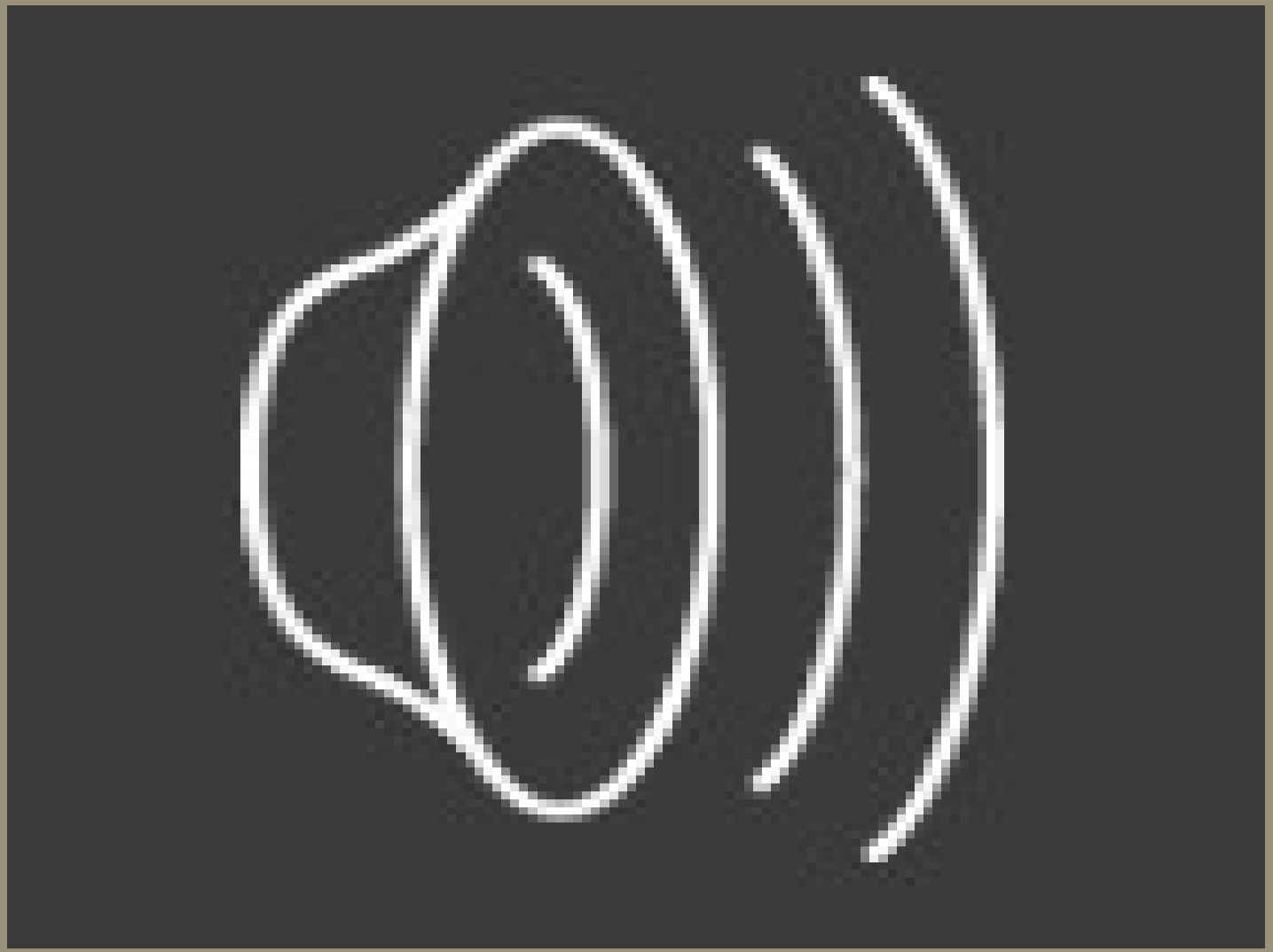
- Man-portable
- 4.5 foot winspan
- 4 pound weight
- Electric

- 100 min duration
- 6+ mile range
- Day or night operation
- Assembles in <3

Falconview Mission Planning


FalconView - LIMITED DISTRIBUTION -
File Edit View Map Overlay Tools Options Favorites Help
Replaying File 14 of 19
MAN 21:21 12-04-03 4+C
11SLU22520707 754 ft
MAG 239
2003_12_04_21_21_49_11SLU22530707.jpg
2003_12_04_21_21_49_11SLU22530707.smd
UAV Mode: MAN
Link Qlt: 100% Range : 000.5km
Flt Time: 019min Bearing : 062deg
UAV Batt: 27.1V GPS Sats : 4
GCU Batt: 25.4V GPS Speed : 25.0kn
Ser Port: REPLAY Rally Mode: RALLY
UAV Alt : 00755ft Rally Alt : 00755ft
-DISPLAYING RECORDED MISSION DATA
-CLOSE REPLAY WINDOW FOR LIVE MISS
Equal Arc
GEOTIFF
1 meter (Color)
WGS84
N 34.38786° W 118.93520° (390 ft)

Raven SUAV Launch



Raven SUAV Fly By

Raven SUAV Recovery

Day and Night Images

Operational Use

- **The Pathfinder Raven is deployed worldwide and has been used effectively for:**
  - Special Reconnaissance
  - Convoy Security
  - Direct Action
  - Route Reconnaissance & Security
  - Force Protection
  - Battlefield Damage Assessment
- **Specific missions:**
  - Hand-emplaced obstacle detection along convoy route
  - Flown for reconnaissance and surveillance in establishing new FOB; identified enemy positions undetected by foot patrols

Operational Use (cont'd)

Operational Use (cont'd)

Future SUAV ACTD Developments
FY06 ACTD Candidate

Problem:

SUAVs provide real-time reconnaissance and surveillance at the small unit level. Urgent fielding initiatives have identified numerous capability gaps with SUAV systems. SUAV R&D supporting USSOCOM or the US Army is limited due to the inability to field systems.

Objectives:

- Fill user identified capability gaps for SUAV systems
- Develop and share new Joint TTPs
- Provide and sustain residual capabilities
- Transition incrementally, beginning in FY06

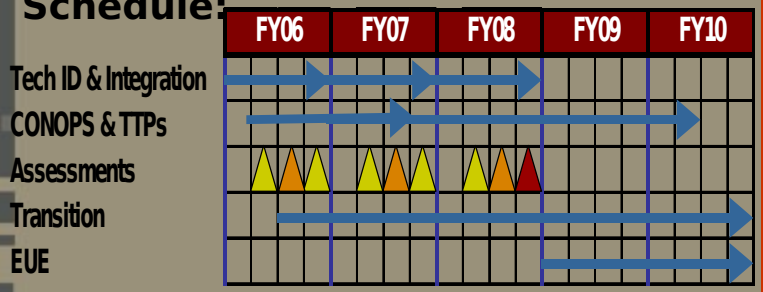
Solution:

- **Program focuses on SUAV supporting technologies, applicable to many families of SUAVs**
- **Spiral development approach to integration of multiple technologies**
- **Foster incremental transition as individual projects occur**

Technology Focus Areas:

- **Sensor Integration**
- **Targeting**
- **Command, Control and Communications**
- **Platform Optimization and Development**
- **Simulation & Training**

Schedule:



Residuals:

- **Three SUAV systems per USSOCOM component**

Participants:

- **Lead Service / Combatant Command: *USSOCOM***
- **Technical Manager: *US Army Natick Soldier Center***
- **Operational Manager: *USSOCOM SOAL-T***
- **Transition Manager: *USSOCOM PM-UV***
- **Industry Partner: *AeroVironment, Inc.***
- **FYFOR: *USSOCOM Components***

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